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25 YEAR RE-REVIEW

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4. DETAILS OF ESTABLISHMENTS IN RUBEZHNYA

The plant at RUBEZHNYA is located on a street running parallel to the railway line. The railway at this particular point runs NE/SW. The factory is located on the south side of this railway about one km. from the station. It exists in two sections, the north plant, which apparently produces phthalic anhydride, and the south plant, which contains the new administrative offices, the new thio-indigo plant, the NIOPIK Research Laboratory and a power plant.

This factory belongs to the Chief Aniline Industries Concern, and is under the control of the Ministry of Chemistry. The Minister at that time was PERVUKHIN, now believed to be a member of the Politburo. During the residence of the Germans in Russia he was replaced by TIKHIMIROV.

This Aniline Industries Concern known as GLAVANTILPROM possesses its own research institute in MOSCOW which is known as NIOPIK (Scientific Institute of Organic Industry and Dye-stuffs). The Research Institute is located at KITAISKAYA ULITZA and at that time was under the scientific control of Prof. VOROZHTSOV, who had interviewed the Germans about the beginning of December after their arrival at RUBEZHNYA.

About the middle of 1948, the research laboratory in RUBEZHNYA in which the Germans worked was made a branch of this NIOPIK Institute and placed under the control of a Director REINFART. REINFART was later replaced by TITKOV, who became ill, and was again replaced by LEVIN. In addition to LEVIN, there was also a woman who exercised some control on the scientific side, but whose name was unknown to the Germans. She was later replaced by TROYANOV, a Russian dye specialist who had been at WOLFEN. TROYANOV received the STALIN prize in 1951 for his work as head of this particular branch of the NIOPIK Institute.

The Institute was frequently visited by personnel believed to have come from the NIOPIK Institute in MOSCOW or from the Ministry of Chemistry itself. These visitors dealt mainly with MAIER-BODE, LEHMANN or BRODESEN, and the following names were known to the Germans:-

MITZUTH (?)	- A textile detergent chemist.
GOLLAND	- A fur dyeing specialist.
STEPHANOV	- Responsible mainly for colour film matters.
DOKONIKHIN	- Believed to be mainly interested in vat dyeing, and also believed to be the Head of the Vat Dyeing Research Section of the NIOPIK Institute in MOSCOW.

During the last four months at RUBEZHNYA, they had a visit from BOGDANOV, who apparently was the responsible official at the NIOPIK Institute in MOSCOW for reading all the reports and papers prepared by the Germans as a result of their work in the research laboratories of the NIOPIK at RUBEZHNYA.

He discussed with each chemist points in their various reports which were not quite clear. Insofar as the Russians were

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concerned, RIECHE was considered to be the group leader, but was not held responsible for the work of the group. In the beginning, he was given tasks for allocation, but after the first year work was allotted to each individual separately.

The first Russian leader of their group was appointed before they became absorbed into the NIOPIK Research Institute, and was one BULKIN, who had formerly been Works Manager of a Section of the factory at RUBEZHNYAYA. He was a chemist, and on his appointment to be leader of the group, was divorced from all association with the factory staff.

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It appeared as though BULKIN was not permitted to take any initiating action whatsoever, but was purely responsible for transmitting orders from MOSCOW to the German technicians and scientists. They remained without a Russian leader from the day of BULKIN's arrest until mid 1948, when they became part of the NIOPIK Institute proper and were given REINFABRT as first head of the new Research Section.

5. RUSSIAN PERSONNEL AT THE NIOPIK RUBEZHNYAYA (MID-MAY 1951)

Director	- TITKOV (succeeded by LEVIN)
Scientific Director (Chief)	- TROYONOV
Chemists (Male)	- V. PLAKIDIN, Fnu } brothers PLAKIDIN MELNIK, fnu
Chemists (Female)	- SIKLITSKAYA BEKHER KHOROSHUN SHALAMOVA

In all, 12-15 Russian chemists and 20 Russian laboratory assistants.

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3. ASSIGNMENTS ALLOCATED TO GERMAN SPECIALISTS AT RUBEZHNYA

The functions of the various German personnel at RUBEZHNYA were as follows:-

- BRINKMANN - Responsible for producing technical drawings of apparatus and instruments for laboratory and works plant. He did very little work during his stay in Russia and passed most of his time reading chemical and engineering literature.
- BRODESEN - Employed on the production of detergents, emulsifiers and wetting agents.
- CARO - Responsible for a number of small duties concerned with the production of intermediate products. Also responsible for nitration problems and, in fact, was provided with a special laboratory apart from the others in which to carry out his nitration work. [redacted] He was also engaged on the production of a wool true-blue dye on the basis of the existing LEVERKUSEN product.
- DREYER - Worked on preparation of alkali salts of indigo during his last year. Previously he had been engaged on indicator research problems and in the preparation of brom-cresol green and isoviolanthrone.
- ENGELMANN - Acted as a general assistant to all the other chemists in their various laboratory work.
- FUCHS - Responsible for the development and maintenance of measuring instruments and for research on indicators.
- GNUCHTEL - Engaged on colour film research and on the production of di-benz-pyrane-quinone.
- HAIL - Worked on colour film and indicators such as metanil yellow and Delta Farbstoff. Also worked on dibrom-dibenz-pyrane-quinone; worked on the syntheses of thio-indigo dyes and on intermediate products such as

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ortho-chlor-cresols, 2:5 dichlor-toluedine;
indigo basic salts; allyl mustard oil, amidol
acids and 2:6 dichlor-para-nitraniline.

- HOFMAN - Worked exclusively on problems concerned with indigo dyestuff.
- KELLER - Engaged in the study of pressure reactions and phenol carbonization, did some work on salicylic acid and paramine salicylic acid.
- KRATZ - Had the same responsibilities as BRINKMANN.
- LEHMANN - Engaged on the production of dyes for fur dyeing.
- MAIER-BODE - Responsible for research and production on insecticides.
- OHLENDORF - Syntheses of Thio-indigo dyestuff.
- RICHTER, Adolf Analysis of research products produced by the other chemists; control of raw materials and intermediate dyestuff analyses.
- RICHTER, Wolfgang Research on dyestuffs, indicators, alizarin yellow and intermediates, such as aminophthalic diethylester, for colour film production.
- RIECHE, Prof. Dr. Responsible for research on vat dyes. Did no other work in Russia. Did not carry out any work on organic peroxides. He was interrogated by VOROZHTSOV at the same time as the other Germans, but was not interrogated by any other Russian scientists.
- SCHULTZE - Research on indicators.
- THURM - Thio-indigo syntheses.
- WOLFF - Worked on thionyl-chloride for colour film and was given the task of producing quantities for research. Given a lot of other small tasks which were cancelled at later stages because of lack of equipment.
- WUTKE - Responsible for running the small experimental dye plant attached to the Research Laboratory.
- RANK }
SCHUSTER } - Carried out catalytic oxidation of naphthalene.

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5. COMMENT ON CONDITIONS AT RUBEZHNYA

Work in the initial stages was delayed mainly because of obsolete equipment and lack of proper laboratory apparatus (they possessed no distillation equipment whatsoever), and most of the German chemists were accustomed, in the early days, to bringing empty tins from their homes to the factory in order to improvise laboratory apparatus. They also had to bring files, hammers, pliers, and fitters tools, because the fitters in the laboratories were so inadequately supplied with such equipment that even elementary jobs could not be carried out.

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Basic chemicals were in short supply, and when simple compounds, such as ordinary salt or sodium sulphate were required, the German chemists werethemselves forced to prepare them in the laboratory. They had no pure hydrochloric acid, and each chemist had to produce pure acid to meet his own requirements. Nitric acid was not easily obtainable, and compounds like acetone and ether were practically unobtainable.

On the whole, however, the problems of supply in materials and in equipment lessened during their stay, and towards the end of their period in Russia, proper modern laboratory equipment and apparatus was becoming available, mainly from ZEISS of JENA.

They were not given any contracts and no instructions about order of work. Their laboratories were badly equipped at first, consisting mainly of a single workshop, but after about six months, they were given a new laboratory known as NIOPIK where conditions were much better. At first, gas was not available in this laboratory, only electric power. Laboratory equipment where available was poor and made from glass of low standard. Russian glass equipment appeared to be of inferior quality to German.

The Russians knew of modern equipment and in fact visitors from the NIOPIK in MOSCOW always boasted of the extremely good apparatus and plant which existed in that Institute, but [redacted] Russian chemists were incapable of using modern apparatus without instruction from the Germans. [redacted]

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Some of the NIOPIK visitors were highly qualified technically as for example STEPHANOV and MITZUTH, and were equivalent to good German research standard. On the whole, the level of ability amongst other Russian personnel in the NIOPIK was lower than the German standards.

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